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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,480	11/25/2003	Kyu-Mann Lee	5649-1218	5987

7590 04/05/2006

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EXAMINER

NGO, NGAN V

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/721,480	LEE ET AL.	
	Examiner	Art Unit	
	Ngan Ngo	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1205</u> . | 6) <input type="checkbox"/> Other: _____ |

The election filed January 20, 2006 has been entered and made of record as paper no. 0106.

Applicant's election without traverse of claims 1-10 in the reply filed on January 20, 2006 is acknowledged.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' prior art figure 2 in view of Lee (KO-1999-5449, cited by Applicants).

Applicants' prior art discloses a ferroelectric memory device comprising an interlayer dielectric layer (3), a protection adhesion layer (6), a buried contact (5), a lower electrode (7), a ferroelectric layer (9), and an upper electrode (11). However, Applicants' prior art figure 2 does not teach the buried contact extending through the protection adhesion layer. Lee discloses in figure 2 the buried contact (204,205,206), extending through the protection adhesion layer (202) and the interlayer dielectric layer (201). Therefore, it would have been obvious to one of ordinary skill in the art to use the teachings of Lee to form a buried contact extending through the protection adhesion

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layer and the interlayer dielectric layer in Applicants' prior art figure 2 in order to have an alignment in the protection adhesion layer and the interlayer dielectric layer.

In re claim 2, figure 2 of Lee shows the upper buried contact portion (206) and the lower buried contact portion (204 and 205).

In re claim 3, the protection adhesion layer in Applicants' prior art comprises titanium oxide.

In re claim 4, Lee teaches the barrier pattern formed of TiN.

Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' prior art figure 2 in view of Lee as applied to claims 1-4 above, and further in view of Oh et al (US 2004/0211997 A1).

Oh et al discloses the ferroelectric layer formed of PZT, the lower electrode and the upper electrode formed of platinum, iridium oxide, and ruthenium oxide, and the plate line 47. Therefore, it would have been obvious to one of ordinary skill in the art to use the teachings of Oh et al to form the claimed device.

The other references are cited to show other structures pertinent to Applicants' disclosure.

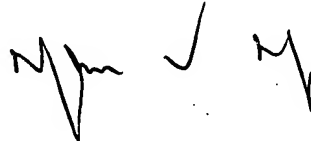
Any inquiry concerning this communication should be directed to Examiner Ngan Ngo at telephone number (571) 272-1711. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ngan Van Ngo', with a checkmark and another mark to its right.

Ngan Van Ngo
Primary Examiner

Ngan Ngo

March 31, 2006